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Examination of interactive peer play behaviors of children aged 48-72 months with father involvement

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Abstract

The aim of this study was to examine the impact of fathers' involvement levels and certain demographic characteristics on the interactive peer play behaviors of children aged 48-72 months. The study included 328 children from Türkiye and their fathers. The Father Involvement Scale and the Penn Interactive Peer Play Scale - Parent Form were used as data collection tools. According to the findings, fathers' involvement levels did not differ based on the gender of the child. However, when the children's interactive peer play behaviors were examined, girls had significantly higher scores in the play interaction dimension, whereas boys scored higher in the play disruption and play disconnection dimensions. Regarding the leisure activity scores of the fathers, it was found that children with one sibling experienced more father involvement compared to those with three or more siblings. Similarly, children with two siblings experienced more father involvement than those with three or more siblings. Despite these differences, however, interactive peer play behaviors did not significantly vary according to the number of siblings. It was also found that children whose mothers had higher levels of education had higher scores in both the leisure and primary caregiving dimensions of father involvement, as well as in the play interaction dimension of peer play behavior. Furthermore, children whose fathers had higher education levels also had higher father involvement in leisure activities. Fathers who spent more time daily playing with their children had higher scores for leisure involvement, primary caregiving, interest, and closeness. However, no significant difference was found between the duration of daily father-child play and the child's interactive peer play behaviors. A moderate positive correlation was found between the dimensions of father involvement (leisure engagement, attention and closeness, primary caregiving) and the play interaction dimension. A low-level negative correlation was identified between attention and closeness and the play disconnection dimension.

Keywords

Father involvement
Father-child relationship
Peer interaction
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Introduction

The preschool period, which is the most critical period for development, is influenced by various environmental factors, primarily parents, leading to positive or negative effects on children's personalities. Particularly in terms of social and emotional development, parents play a crucial role in helping children develop a healthy personality and establish positive interactions with their surroundings (Carneiro et al., 2019; Kandır & Alpan, 2008). The quality of time spent with parents during this influential period is vital for development, and this responsibility should not be assigned to a single parent. In the preschool period, fathers hold significant responsibilities for the child's development and education, comparable to those of mothers (Lin et al., 2019; McBride & Rane, 1997). However, in many societies, including Turkish society, mothers are primarily seen as the person responsible for the care and education of the child (Tezel Şahin & Özbey, 2007). However, recent studies have shown that the active involvement of both mothers and fathers in the care and education processes of the child not only provides interactive and joint contributions to the child's development but also has a positive impact on the relationship between the parents (Cabrera et al., 2018). If both mothers and fathers actively participate in the care and education of their children, complementing each other and providing support, they can achieve significant gains in both their relationships with their children and with each other (Sullivan et al., 2020; Tezel Şahin & Özbey, 2007).

Until about 20 years ago, in most studies on family involvement data were collected mainly from mothers. There has been limited research on father involvement by collecting data directly from them (Slaughter & Nagoshi, 2020; Wilson & Prior, 2011; Zanoni et al., 2013). However, fathers' participation in education is equally as important as mothers' involvement (Bronte Tinkew et al., 2008; Cabrera et al., 2011; Jones, 2004). Preschool-aged children enjoy spending time with their fathers, exchanging ideas, and learning new things from them (Uzun & Baran, 2019). Moreover, it has been observed that children who are supported by father involvement during this period effectively receive the necessary knowledge, skills, and emotional support for their development and education (Uzun & Baran, 2019; Zhang et al., 2021). These findings indicate that the roles of both mothers and fathers in children's development should be addressed through a holistic approach, and that supporting fathers' more active involvement in educational processes could make a particularly significant contribution to children's well-rounded development.

Positive relationships between fathers and children from early ages can positively impact various aspects of children's well-being, their problem-solving abilities, and their academic, social, and emotional skills (Coyl Shepherd & Newland, 2013). Research indicates that involved fathers positively influence a child's cognitive skills, social-emotional competence, and peer relationships (Veríssimo et al., 2011; Xu et al., 2020). Furthermore, actions that positively affect children's peer relationships, such as interactive play, highlight the significance of parental involvement, with both mothers and fathers participating in their children's activities. As a result of parental participation, play becomes an integral part of family life, contributing to its nourishment and formation (Schneider et al., 2022; Tamis LeMonda et al., 2002). The study conducted by Robinson et al. (2021) confirmed that play interactions between fathers and children have positive effects on children's emotional regulation and social skills. That study found that fathers typically engaged in more physical and stimulating types of play, and such interactions positively influenced the children's emotional regulation and social competencies. These play-based interactions not only strengthen father-child bonds but also provide a foundation for children to practice and develop the skills necessary for forming positive peer relationships. Moreover, the quality of these play experiences has been associated with more favorable outcomes in children's social development, emphasizing the importance of conducting play in a supportive and responsive manner. In this context, the active involvement of fathers in their children's lives supports the development of children's social and emotional skills, allowing these skills to be reinforced particularly through peer interactions in play settings (Robinson et al., 2021).

Interactive peer play, a universal characteristic, is engaged in by all preschool-aged children. Children from different lifestyles and cultures naturally engage in various games with each other (Edwards, 2021; Zigler et al., 2002). Interaction within the play environment is a determinant of a child's social behaviors (Sevinç, 2004). A child's personality becomes more pronounced during play (Seyrek & Sun, 1991). Additionally, play serves as a crucial tool in determining a child's interaction patterns with adults and peers (Pellegrini & Smith, 1998; Shorer & Leibovich, 2020), positioning it among the most favorable environments for the development of positive peer relationships. The relationships children develop with their parents also play a significant role in shaping their behavior in play environments (Stearns, 2019; Tamis LeMonda et al., 2002). In particular, the playtime fathers spend with their children not only supports all areas of children's development but also imparts diverse knowledge to children, contributing to the positive development of peer relationships (Işıkoğlu & Bora İvrendi, 2008; Menashe Grinberg & Atzaba Poria, 2017).

Although the number of studies conducted in Türkiye on father involvement during the preschool period is small (Kuzucu, 2011; Yoleri, 2022), there has been a noticeable increase in international research on this topic in recent years (Alabay, 2021; Arslan & Demircioğlu, 2023; d'Orsi et al., 2023; Lamb & Lewis, 2010; Pekel Uludağlı, 2017; Varol et al., 2023; Zhang et al., 2021). Thus, studies conducted in Türkiye have remained limited compared to international efforts. However, several national and international studies have examined interactive play behaviors (Can Yaşar et al., 2019; Dunn, 2002; Karaca et al., 2020; Moustafa, 2021; Ross & Howe, 2008; Torres et al., 2013; Uygun & Kozikoğlu, 2019; Yokuş & Konokman, 2019). The research conducted in this field in Türkiye has predominantly focused on the effects of father involvement on various domains of child development (Arslan & Demircioğlu, 2023; Gürşimşek et al., 2007; Kuzucu, 2011). Although some in-depth examinations of father involvement are available in the literature (Kuzucu, 2011; Yoleri, 2022), studies that specifically explore the impact of the father-child relationship on children's interactive peer play behaviors are extremely scarce (Attili et al., 2015; Karaca et al., 2019). A review of the international literature reveals a limited number of studies that simultaneously address both father involvement and interactive peer play behaviors (Downer & Mendez, 2005; MacDonald & Parke, 1984; Pettit et al., 1998; Suh, 2017; Torres et al., 2013). However, to date, no study conducted in Türkiye has been identified that concurrently examines father involvement and interactive peer play behaviors.

In a previous study, it was determined that a positive father-child relationship positively influences the peer play behaviors of children (MacDonald & Parke, 1984). Another study conducted by the same researchers two years later found that the physical play fathers engage in with their children in daily life plays a significant role in the gender development of children (MacDonald & Parke, 1986). Children supported by fathers from an early age, having positive interactions with their fathers, were found to exhibit increased cognitive, linguistic, social, and emotional skills; independence; and positive interpersonal relationships and academic achievements (Gürşimşek et al., 2007).

In another study, children who frequently engaged in interactive peer play at home were observed to exhibit less disruptive behavior, less detachment from the game, high motivation, independence, positive attitudes towards learning, and the ability to concentrate (Fantuzzo & McWayne, 2002). Additionally, when the frequency and quality of fathers playing with children were examined in their early years, it was determined that play positively influenced children's social, emotional, and cognitive development (Amodia Bidakowska et al., 2020). McLean et al. (2023) found that adults' lack of understanding of the meaning of play hindered young children's effective engagement in the play process and maximization of learning opportunities through play.

Although previous studies have shown that positive father-child relationships influence children's social and emotional development (Gürşimşek et al., 2007; MacDonald & Parke, 1984, 1986) and that interactive peer play supports various aspects of early childhood development (Amodia-Bidakowska et al., 2020; Fantuzzo & McWayne, 2002; McLean et al., 2023), there remains a significant gap in the literature regarding the simultaneous and direct examination of the relationship between the father's involvement and the child's interactive peer play behaviors. The vast majority of existing

research focuses either solely on father involvement or solely on peer play; no previous study has been identified that addresses the relationship between these two variables, particularly within the context of Türkiye. Therefore, in the present study, the aim was to examine the relationship between the levels of father involvement and interactive peer play behaviors of children aged 48-72 months. The research problem is defined as "What are the relationships between the levels of father involvement and interactive peer play behaviors, as well as some demographic characteristics of children aged 48-72 months? Is there a relationship between the levels of father involvement and interactive peer play behaviors of preschool children?". In line with this, the following questions will be addressed:

- What are the levels of father involvement and interactive peer play behavior of children aged 48-72 months?
- Do the levels of father involvement and interactive peer play behaviors of children aged 48-72 months show significant differences according to some variables (gender, number of siblings, parental education level, and father's daily playtime with the child)?
- Is there a significant relationship between children's father involvement levels and interactive peer play behaviors?

Method

Research Model

In the present study, in which the aim was to determine the relationship between the levels of father involvement and interactive peer play behaviors, the relational survey model, a quantitative research method, was used. Quantitative research provides results based on deductive measurements and analysis (Watson, 2015). The aim of the relational survey model is to determine the degree of relationships between two or more variables and the causes and consequences of these variables (Büyüköztürk et al., 2014).

Population/Sample

The population of the study consisted of children aged 48-72 months (and their fathers) attending independent kindergartens in the city center of Izmir. The sample group of this study was determined using a random sampling method and consisted of 328 children (and their fathers) enrolled in 9 independent preschools affiliated with the Ministry of National Education, located in the central districts of Buca, Konak, and Karşıyaka in the province of İzmir.

Of the children, 172 (52.4%) were 48-60 months old and 156 (47.6%) were 61-72 months old. There were 169 female children (51.5%) and 159 male children (48.5%). Among them, 120 children (36.6%) had one sibling, 167 children (50.9%) had two, and 41 children (12.5%) have three or more. Regarding the duration of preschool education, 137 children (41.8%) had attended for 0-1 year, 142 children (43.3%) for 1-2 years, and 49 children (14.9%) for 2-3 years.

Regarding the educational level of the mothers, 38 children (11.6%) had mothers with an elementary school education, 89 (27.1%) had mothers with a high school education, and 201 (61.3%) had mothers with a university education. The educational level of the fathers was as follows: 40 children (12.2%) had fathers with an elementary school education, 110 (33.5%) had fathers with a high school education, and 178 (54.3%) had fathers with a university education. Among the fathers, 220 (67.1%) were in the 20-40 age range and 108 (32.9%) were 41 or older. In terms of daily playtime with their children, 89 fathers (27.1%) played for 0-30 minutes, 138 (42.1%) played for 31-60 minutes, and 101 (30.8%) played for 61 minutes or more.

Data Collection Tools

To determine father involvement, the Father Involvement Scale, developed by Sımsıkı and Şendil (2014), was used. To measure the quality of children's interactive peer play behaviors, the Penn Interactive Peer Play Scale-Parent Form, developed by Fantuzzo et al. (1998) and adapted into Turkish by Ahmetoğlu et al. (2016), was utilized. Demographic information about the children was collected using a personal information form developed by the researchers.

The Father Involvement Scale is a five-point Likert-type scale that assesses how often fathers with children aged 36-72 months participate in activities in the dimensions. The scale consists of three dimensions: arbitrary occupation (AO) (17 items), attention and closeness (AC) (12 items), and primary care (PC) (8 items). The scale, comprising a total of 37 items, can yield a minimum score of 37 and a maximum score of 185. The Cronbach's alpha reliability coefficients for the scale were determined as 0.89 for AO, .83 for PC, .85 for AC, and .92 for the total score (Sımsıkı & Şendil, 2014).

The Penn Interactive Peer Play Scale-Parent Form is a four-point Likert-type scale that evaluates contextual behaviors exhibited by children with their peers through assessments made by parents regarding the play interactions of children aged 40-82 months. The scale consists of three dimensions: play interaction (PI) (9 items), play disruption (PDR) (10 items), and play disconnection (PDC) (10 items), totaling 29 items. The Cronbach's alpha reliability coefficients for the scale were determined as 0.72 for PI, 0.75 for PDR, and 0.68 for PDC (Ahmetoğlu et al., 2016).

The personal information form developed by the researchers includes variables such as the gender of the child, the number of siblings, the educational level of the mother and father, and the daily playtime of the father with the child.

Data Collection Process

Permission was obtained from the developers and adaptors of the Father Involvement Scale and the Penn Interactive Peer Play Scale-Parent Form, which were used in the study. Prior to implementation, ethical approval was obtained. Randomly selected classes were determined through discussions with school administrators of schools in Buca, Karşıyaka, and Konak. Preschool teachers were informed about the research. Since participation in the study was voluntary, a parental consent form and volunteer participation form were sent to the parents of children in the participating schools. The children of fathers who agreed to participate in the research were included in the implementation. The Father Involvement Scale, Penn Interactive Peer Play Scale-Parent Form, and personal information form were distributed to parents who agreed to fill out the scales and forms, and they were collected on the specified date. Ethics committee approval was obtained with decision number 22 dated 13/06/2023.

Data Analysis

IBM SPSS was used for the examination and statistical analysis of the data obtained in the research. Prior to analysis, an examination of missing values and outliers was conducted, and no missing values or outliers were found. According to Tabachnick and Fidell (2013), skewness and kurtosis values between ±1.50 can be considered normal distribution in social science research. Büyüköztürk (2012) stated that distribution can be considered normal between ±2.00. When the skewness and kurtosis values were examined, it was determined that all dimensions of the Father Involvement Scale and the Penn Interactive Peer Play Scale-Parent Form showed a normal distribution. In this context, parametric tests were applied. The independent samples t-test, one-way analysis of variance (ANOVA), LSD test, and Pearson’s correlation analysis were applied.

Assumptions and Limitations

In this study, it was assumed that fathers responded sincerely and honestly to the data collection tools and that their evaluations regarding their children reflected actual behaviors. The sample was limited to children and fathers from independent preschools located in three central districts of İzmir; this limits the generalizability of the findings.

Results

The levels of father involvement and interactive peer play behavior of children aged 48-72 months are presented in Table 1.

Table 1. Levels of Father Involvement and Interactive Peer Play Behavior

	n	Min	Max	Mean	sd
FI AO	328	24.00	85.00	61.24	13.11
FI AC	328	12.00	60.00	54.41	8.098
FI PC	328	8.00	40.00	28.67	8.10
PENN PI	328	9.00	36.00	26.03	4.90
PENN PDR	328	10.00	28.00	14.42	3.26
PENN PDC	328	10.00	35.00	15.58	4.12

The Father Involvement Scale-Arbitrary Occupation (FI AO), The Father Involvement Scale-Attention and Closeness (FI AC), The Father Involvement Scale-Primary Care (FI PC), The Penn Interactive Peer Play Scale-Play Interaction (PENN PI), The Penn Interactive Peer Play Scale-Play Disruption (PENN PDR), The Penn Interactive Peer Play Scale-Play Disconnection (PENN PDC)

Upon examining Table 1, it is observed that the averages obtained from the dimensions of the Father Involvement Scale for children aged 48-72 months were 61.24 for arbitrary occupation, 54.41 for attention and closeness, and 28.67 for primary care. The averages obtained from the dimensions of the Penn Interactive Peer Play Scale-Parent Form were 26.03 for play interaction, 14.42 for play disruption, and 15.58 for play disconnection.

Table 2 presents the results of independent group t-tests for the levels of father involvement and dimension scores of interactive peer play behaviors based on gender.

Table 2. Independent Group t-test Results for Gender Differences in Father Involvement and Interactive Peer Play Behaviors

Score	Gender	n	Mean	sd	t	df	p
FI AO	Female	169	61.38	13.12	.20	326	.84
	Male	159	61.09	13.15			
FI AC	Female	169	54.28	8.29	-.31	326	.75
	Male	159	54.56	7.92			
FI PC	Female	169	27.89	8.54	-1.80	326	.07
	Male	159	29.50	7.55			
PENN PI	Female	169	26.54	4.62	1.98	326	.04
	Male	159	25.48	5.14			
PENN PDR	Female	169	14.05	3.03	-2.11	326	.04
	Male	159	14.81	3.46			
PENN PDC	Female	169	15.12	3.94	-2.10	326	.04
	Male	159	16.07	4.25			

As seen in Table 2, the levels of father involvement do not differ based on the gender of the children (t=.84; .75; .07). However, significant differences were found in play interaction in favor of girls, while the dimensions play disruption and play disconnection showed significant differences in favor of boys (t= .04; .04; .04; $p<.05$).

The one-way ANOVA results for the levels of father involvement and dimension scores of interactive peer play behaviors based on the number of siblings are presented in Table 3.

Table 3. One-Way Analysis of Variance Results for Father Involvement and Interactive Peer Play Behaviors based on the Number of Siblings

					ANOVA						
***f*, $\bar{x}$, sd Score**	**Number of Siblings**	**n**	$\bar{x}$	**sd**	**CoV**	**ST**	**df**	**SO**	***F***	***p***	**Dif.***
FI AO	One	120	61.58	13.41	Between groups	1996.03	2	998.01	5.98	.00	1-3
	Two	67	62.57	12.81	Within-group	54237.94	325	166.89			2-3
	Three or more	41	54.83	11.85	Total	56233.97	327				3-1 3-2
FI AC	One	120	54.22	8.36	Between groups	167.90	2	83.95	1.28	.28	
	Two	67	54.96	8.14	Within-group	21273.71	325	65.46			
	Three or more	41	52.76	7.00	Total	21441.61	327				
FI PC	One	120	28.38	8.41	Between groups	267.42	2	133.71	2.05	.13	
	Two	67	29.38	7.92	Within-group	21203.36	325	65.24			
	Three or more	41	26.61	7.69	Total	21470.78	327				
PENN PI	One	120	25.98	4.76	Between groups	55.04	2	27.52	1.15	.32	
	Two	67	26.31	5.03	Within-group	7791.71	325	23.97			
	Three or more	41	25.02	4.75	Total	7846.75	327				
PENN	One	120	14.69	3.87	Between groups	13.93	2	6.97	.65	.52	
PDR	Two	67	14.26	2.91	Within-group	3468.01	325	10.67			
	Three or more	41	14.29	2.67	Total	3481.94	327				
PENN	One	120	16.13	4.37	Between groups	91.80	2	45.90	2.74	.07	
PDC	Two	67	15.06	4.00	Within-group	5454.14	325	16.78			
	Three or more	41	16.10	3.62	Total	5545.94	327				

*LSD Results

In Table 3, a significant difference was found in the arbitrary occupation scores of children aged 48-72 months between the groups in terms of the arithmetic means ($F=5.98$; $p<.05$). Post-hoc analyses revealed homogeneity of variances and the LSD test was applied ($LF=.73$; $p>.05$). The difference in children occurred at the sibling level, favoring one sibling over three or more siblings at the $p<.05$ level. Between two siblings and three or more siblings, the group with two siblings had an advantage at the $p<.05$ level. However, no significant differences were found between the arithmetic means of the other groups ($p>.05$). The one-way ANOVA results for the levels of father involvement and dimension scores of interactive peer play behaviors based on the mother's educational level are presented in Table 4.

Table 4. One-Way Analysis of Variance Results for Father Involvement Levels and Interactive Peer Play Behaviors based on the Mother's Educational Level

ANOVA											
***f*, $\bar{x}$, sd Score**	**Mother's educ. level**	**n**	$\bar{x}$	**sd**	**CoV**	**ST**	**df**	**SO**	***F***	***p***	**Dif.***
FI AO	Elementary	38	55.45	15.04	Between groups	2439.62	2	1219.81	7.37	.00	1-3
	High School	89	59.21	12.28	Within-group	53794.35	325	165.52			2-3
	University	201	63.23	12.68	Total	56233.97	327				3-1 3-2
FI AC	Elementary	38	52.05	11.94	Between groups	241.55	2	120.78	1.85	.16	
	High School	89	54.61	7.64	Within-group	21200.06	325	65.23			
	University	201	54.78	7.34	Total	21441.61	327				
FI PC	Elementary	38	25.05	8.79	Between groups	821.43	2	410.72	6.46	.00	1-3
	High School	89	27.72	7.89	Within-group	20649.34	325	63.54			2-3
	University	201	29.77	7.84	Total	21470.78	327				3-1 3-2
PENN PI	Elementary	38	23.26	5.42	Between groups	331.91	2	165.95	7.18	.00	1-2
	High School	89	26.22	4.62	Within-group	7514.84	325	23.12			1-3
	University	201	26.46	4.77	Total	7846.75	327				2-1 3-1
PENN PDR	Elementary	38	16.11	3.46	Between groups	121.96	2	60.98	5.90	.00	1-2
	High School	89	14.20	3.35	Within-group	3359.98	325	10.34			1-3
	University	201	14.20	3.11	Total	3481.94	327				2-1 3-1
PENN PDC	Elementary	38	16.39	4.22	Between groups	28.99	2	14.50	.85	.43	
	High School	89	15.42	4.41	Within-group	5516.95	325	16.98			
	University	201	15.50	3.97	Total	5545.94	327				

* LSD Results

Examination of Table 4 reveals a significant difference in father involvement in the dimensions arbitrary occupation and primary care, as well as in interactive peer play behaviors in the dimensions play interaction and play disruption (F=7.37; 6.46; 7.18; 5.90; p<.05). Post-hoc analyses revealed homogeneity of variances and the LSD test was applied (LF=.15; .81; .62; .21; p>.05). Significant differences were found in the dimensions of arbitrary occupation and primary care of father involvement between elementary school and university and between high school and university, in favor of those with a university education. In the dimension play interaction in interactive peer play behaviors, significant differences were found between elementary school and high school and between elementary school and university, in favor of those with a high school and university education (p<.05). In the dimension play disruption, significant differences were found between elementary school and high school and between elementary school and university, in favor of those with an elementary school education (p<.05). However, no significant differences were found between the arithmetic means of the other groups (p>.05).

Table 5 presents the one-way ANOVA results for the levels of father involvement and dimension scores of interactive peer play behaviors based on the father's educational level.

Table 5. One-Way Analysis of Variance Results for Father Involvement Levels and Interactive Peer Play Behaviors based on the Father's Educational Level

ANOVA											
***f*, $\bar{x}$, sd Score**	**Father's educ. level**	**n**	$\bar{x}$	**sd**	**CoV**	**ST**	**df**	**SO**	***F***	***p***	**Dif.***
FI AO	Elementary	40	57.28	13.98	Between groups	2299.74	2	1149.87	6.93	.00	1-3
	High School	110	58.81	12.92	Within-group	53934.23	325	165.95			2-3
	University	178	63.63	12.61	Total	56233.97	327				3-1 3-2
FI AC	Elementary	40	54.43	9.49	Between groups	34.53	2	17.27	.26	.77	
	High School	110	53.97	8.09	Within-group	21407.08	325	65.87			
	University	178	54.69	7.80	Total	21441.61	327				
FI PC	Elementary	40	27.65	8.66	Between groups	103.71	2	51.85	.79	.46	
	High School	110	28.25	8.35	Within-group	21367.07	325	65.74			
	University	178	29.16	7.83	Total	21470.78	327				
PENN PI	Elementary	40	24.93	5.29	Between groups	72.23	2	36.12	1.51	.22	
	High School	110	25.87	4.89	Within-group	7774.52	325	23.92			
	University	178	26.37	4.80	Total	7846.75	327				
PENN	Elementary	40	15.13	3.24	Between groups	22.60	2	11.30	1.06	.35	
PDR	High School	110	14.33	3.27	Within-group	3459.34	325	10.64			
	University	178	14.32	3.26	Total	3481.94	327				
PENN	Elementary	40	16.45	4.58	Between groups	35.38	2	17.69	1.04	.35	
PDC	High School	110	15.53	4.11	Within-group	5510.55	325	16.96			
	University	178	15.42	4.01	Total	5545.94	327				

*LSD Results

According to Table 5, the father's educational level creates a significant difference in the dimension arbitrary occupation of father involvement for children aged 48-72 months (F=6.93; p<.05). Due to the homogeneity of variances, the LSD test was applied (LF=.57; p>.05). Significant differences were found in the dimension arbitrary occupation of father involvement between university and elementary school and between university and high school, in favor of those with a university education (p<.05). However, no significant differences were found between the arithmetic means of the other groups (p>.05).

Table 6 presents the one-way ANOVA results for the levels of father involvement and dimension scores of interactive peer play behaviors based on the daily playtime between the father and the child.

Table 6. One-Way Analysis of Variance Results for Father Involvement Levels and Interactive Peer Play Behaviors based on the Father's Daily Playtime with the Child

					ANOVA						
***f*, $\bar{x}$, sd Score**	**Playtime with the father**	**n**	**$\bar{x}$**	**sd**	**CoV**	**ST**	**df**	**SO**	***F***	***p***	**Dif. ***
FI AO	0-30 min.	89	53.53	12.83	Between groups	8412.47	2	4206.23	28.59	.00	1-2
											1-3
	31-60 min.	138	62.24	12.07	Within-group	47821.51	325	147.14			2-1
											2-3
	61 min. and above	101	66.67	11.57	Total	56233.97	327				3-1
											3-2
FI AC	0-30 min.	89	52.20	9.06	Between groups	655.35	2	327.68	5.12	.01	1-2
	31-60 min.	138	54.82	7.34	Within-group	20786.26	325	63.96			1-3
	61 min. and above	101	55.81	7.86	Total	21441.61	327				2-1
											3-1
FI PC	0-30 min.	89	26.40	9.06	Between groups	736.58	2	368.29	5.77	.00	1-2
	31-60 min.	138	28.93	7.75	Within-group	20734.20	325	63.80			1-3
	61 min. and above	101	30.31	7.27	Total	21470.78	327				2-1
											3-1
PENN PI	0-30 min.	89	25.69	4.57	Between groups	85.93	2	42.96	1.80	.17	
	31-60 min.	138	26.62	4.66	Within-group	7760.82	325	23.88			
	61 min. and above	101	25.51	5.43	Total	7846.75	327				
PENN PDR	0-30 min.	89	14.34	3.36	Between groups	1.22	2	.61	.06	.94	
	31-60 min.	138	14.49	2.99	Within-group	3480.72	325	10.71			
	61 min. and above	101	14.41	3.55	Total	3481.94	327				
PENN PDC	0-30 min.	89	15.42	3.74	Between groups	8.61	2	4.31	.25	.78	
	31-60 min.	138	15.77	3.92	Within-group	5537.33	325	17.04			
	61 min. and above	101	15.47	4.70	Total	5545.94	327				

*LSD Testi Sonuçları

Table 6 reveals that the father's daily playtime with the child shows a significant difference in all dimensions of father involvement (F=28.59; 5.12; 5.77; p<.05). Due to the homogeneity of variances, the LSD test was applied (LF=.53; .09; .07; p>.05). In the dimension arbitrary occupation, significant differences were found in favor of the group spending more than 61 minutes playing games, compared to the groups with 0-30 minutes and 31-60 minutes. Between 31-60 minutes and 0-30 minutes, a significant difference was also found in favor of the group playing games for 31-60 minutes. In the dimensions primary care and attention and closeness, significant differences were found between 31-60 minutes and 0-30 minutes, favoring the group playing games for 31-60 minutes. Similarly, between 61 minutes and above and 0-30 minutes, a significant difference was found in favor of the group playing games for more than 61 minutes (p<.05). However, no significant differences were found between the arithmetic means of the other groups (p>.05).

Table 7 presents the results of Pearson's correlation analysis conducted to determine the relationship between children's levels of father involvement and interactive peer play behaviors.

Table 7. Pearson Correlation Analysis Results between Father Involvement Levels and Interactive Peer Play Behaviors

		PENN PI	PENN PDR	PENN PDC
FI AO	r	.38	-.04	-.09
	p	.00	.47	.12
	N	328	328	328
FI AC	r	.39	-.02	-.15
	p	.00	.68	.01
	N	328	328	328
FI PC	r	.31	.01	-.04
	p	.00	.92	.49
	N	328	328	328

As seen in Table 7, a positive and moderate correlation was identified between the dimensions of father involvement, namely arbitrary occupation, attention and closeness, primary care, and play interaction (r=.38; .39; .31; p<.05). Additionally, a low-level negative correlation was found between the dimension attention and closeness of father involvement and play disconnection (r=-.15; p<.05).

Discussion, Conclusion and Suggestions

In the present study, the aim was to examine the interactive peer play behaviors of children aged 48-72 months in terms of father involvement levels and certain demographic characteristics. It was found that father involvement levels did not differ based on the children's genders. Parallel to our study, the literature indicates that there are studies showing that the gender variable does not affect father involvement (Deleş & Kaytez, 2020; Paulson et al., 2010; Uzun & Baran, 2019). Recent research also suggests that fathers contribute to the development of their children regardless of their genders.

Regarding interactive peer play behaviors of children, it was determined that the play interaction dimension showed a significant difference in favor of girls, whereas the dimensions play disruption and play disconnection favored boys. Similar findings have been reported in both national and international studies, indicating that girls tend to have higher levels of play interaction than boys (Can Yaşar et al., 2019; Torres et al., 2013). Similarly, levels of play disruption have been found to be higher in boys compared to girls, in line with our study (Karaca et al., 2020; Torres et al., 2013). Moreover, Polenski (2001) mentioned that boys tend to display more externalizing behavior problems than girls. Play interaction reflects the strong aspects of children in the game, including creative behavior and encouragement for other children to join the game. Play disruption represents antisocial behaviors that hinder ongoing peer interaction in the game. Children may exhibit aggressive and angry behaviors. Play disconnection reflects a lack of participation in peer games and children may show introverted behaviors (Fantuzzo et al., 1998). These characteristics are associated with social skills. In the preschool period, girls tend to exhibit more positive traits than boys in terms of social skill levels (Mercurio, 2003; Park & Cheah, 2005), suggesting that they experience fewer difficulties and manage peer interaction-rich play processes more effectively. In their study examining father involvement and peer play competence in preschool-aged children, Torres et al. (2013) used multiple regression models and found that boys were more likely to exhibit disruptive play behaviors and showed less peer interaction. In this context, the results of the study suggest that, similar to the literature, it is expected to find more positive behaviors in the interactive peer play of girls compared to in boys.

In terms of the arbitrary occupation scores of fathers, a preference was identified for children with one sibling over those with three or more siblings. Additionally, a preference was determined for the group with two siblings over those with three or more siblings. In this context, it appears that as the number of children decreases, fathers' engagement in free-time activities and various games with their children increases. In the literature, there are studies in which a decrease in father involvement rates was found as the number of children increased (Mehall et al., 2009; Paquette et al., 2022; Sımsıkı &

Şendil, 2014). Arbitrary occupation includes fathers playing games and engaging in free-time activities with their children (Sımsıkı & Şendil, 2014). Playing games within the context of arbitrary occupation is a social behavior. With an increase in the number of children, it is thought that the increase in the number of individuals with whom children can play games at home may lead to children playing games with their siblings. However, it can be emphasized that the number of siblings is not a factor causing a change in fathers' behaviors regarding showing attention, closeness, and providing primary care to their children. In this context, the fact that father involvement as reflected by showing interest, establishing closeness, and providing basic care does not vary based on the number of siblings may be explained by fathers prioritizing those duties and responsibilities over leisure engagement.

The research results indicated that interactive peer play behaviors did not differ based on the number of siblings for children. These findings are in line with studies in the literature suggesting that the number of siblings does not create a difference in interactive peer play behaviors (Moustafa, 2021; Uygun & Kozikoğlu, 2019). However, there are also studies suggesting that the number of siblings may lead to differences in children's peer play behaviors (Dunn, 2002; Ross & Howe, 2008; Yokuş & Konokman, 2019). Ross and Howe (2008) emphasized that the relationships developed between siblings are likely to be reflected in children's relationships and play with peers, and they highlighted not only sibling relationships but also parent-child relationships in this regard. Furthermore, they noted that parents, like siblings, play an important role in children's social interactions with peers. The inconsistencies in the literature may be attributed to differences in parental attitudes at home, levels of parental involvement, the nature of communication and interaction between siblings, and cultural factors. In the present study, the finding that children with one or two siblings differed in terms of the father's leisure engagement can be interpreted as an indication that the potential lack of social interaction behaviors in the play processes of children with fewer siblings might be compensated through father involvement. Therefore, the children's interactive peer play behaviors did not vary significantly according to the number of siblings. It is also thought that the characteristics of the interactive play behaviors established between siblings may influence whether a significant difference emerges.

It was found in the present study that children whose mothers had higher levels of education had higher scores in father participation's arbitrary occupation and primary care, as well as interactive peer play behaviors' game interaction. It was also concluded that children whose fathers had higher levels of education had higher scores in father participation's arbitrary occupation. Similarly, higher education levels were positively associated with primary care, participation in play, and father involvement, consistent with previous research (Craig, 2006; Ihmeideh, 2014; Mwoma, 2009; Sasaki et al., 2010). In our study, a difference in favor of children with lower mother's education levels was found in the play disruption dimension. Shafiq (2010) also consistently stated that higher mother's education positively influences children's social behaviors. Nkwake (2009) found that parents with higher education levels had higher levels of knowledge and stronger parent-child relationships. In this context, it appears that as the educational levels of caregivers increase, their knowledge about child development and how to support it also increases. This situation positively affects father involvement and children's peer play behaviors. Additionally, it can be argued that parents with higher education levels mutually influence each other and show increased interest in their children.

In groups in which fathers spend more time playing daily games with their children, it was determined that father involvement's arbitrary occupation, primary care, and attention and closeness scores were higher. Levin and Currie (2010) mentioned that communication between fathers and children is influential in small children feeling happy and satisfied with their lives. Culp et al. (2000) found that high levels of father involvement were associated with an increased sense of acceptance perceived by children from their fathers, and they emphasized the significance of fathers taking on the role of playmate. Another study revealed that higher levels of father involvement were linked to increased prosocial play with peers (Torres et al., 2013). Based on the finding of our study that the act of fathers spending more time playing with their children enhanced father involvement, it can be

suggested that children may feel valued and happy in the presence of father involvement, which could contribute to the development of positive characteristics in their interactive play behaviors. However, no significant difference was found between the amount of time fathers spent playing with their children on a daily basis and the children's interactive play behaviors. Examination of the literature indicates that fathers generally play educational games with preschool children and engage less in interesting games, stories, or experiments (Kutluana & Şahan, 2021). In another study, it was found that fathers go to parks/picnics and theaters/cinemas and engage in sports and shopping (buying toys, books) with their children during the day (McWayne et al., 2013; Şahin et al., 2017). McWayne et al. (2013) explained in their meta-analysis that the time fathers spend with their children can play a role just as important as other factors, provided that this time is devoted to interactive father-child activities that are expected to support the child's development. Indeed, as seen in various research, the activities fathers engage in while playing with their children are limited and often remain at the level of father involvement. In this study, the duration of fathers' involvement was not reflected in the children's interactive peer play behaviors. This outcome may be attributed to various factors including the attitudes and roles that fathers exhibit during play, the quality of the father-child relationship, the nature of the time spent together, the number of children in the family, and the developmental characteristics of the children.

In the present study, a positive moderate correlation was found between father involvement's dimensions of arbitrary occupation, attention and closeness, primary care, and play interaction. A negative low-level correlation was determined between the attention and closeness dimensions of father involvement and play disconnection. It is apparent that children who receive attention from their fathers are inclined to play with their peers in an outgoing manner. A review of the relevant literature shows that Downer and Mendez (2005), in their study on African American fathers' involvement and the school readiness of preschool children, identified a positive association between the father's involvement, particularly in school-based educational activities, and the relationship between school readiness and interactive play behaviors. In a study by Suh (2017) titled "The Effect of Marital Satisfaction on Children's Peer Play Behavior and Problem Behaviors: The Mediating Role of Father's and Mother's Parenting Behaviors," children's peer play behaviors were explained by the father's warm parenting behaviors. Accordingly, it may be assumed that the father's interest and the positive play experiences shared with the father are reflected in the child's interactive peer play behaviors. Pettit et al. (1998) associated fathers' involvement in child-peer play with higher levels of social competence in children. Another study found that fathers' engagement in physical play was positively associated with children's peer relationships, particularly among boys (MacDonald & Parke, 1984). In light of the findings from this study and the relevant literature, it can be suggested that the father's involvement contributes to the child's sense of well-being and supports development with the father serving as a positive role model for interactive behaviors during play processes.

In the present study, the interactive peer play behaviors of children were examined using quantitative research methods. These methods, such as observation and interviews, can be employed for in-depth analysis. Different variables can be considered in order to investigate the relationship between father involvement and interactive peer play behaviors. The interactive play behaviors of fathers with their children during the play process can be observed and compared across different cultures. Although the number of quantitative studies addressing father involvement in relation to assorted variables is increasing, there remains a limited number of studies examining the relationship between the father's involvement and the child's interactive peer play behaviors. In future research, such investigations could be designed using qualitative or mixed-methods approaches. In our study, education level was identified as a significant variable for both the father's involvement and the child's play behaviors. Therefore, educational programs could be developed to raise awareness among both fathers and mothers about the benefits of positive father involvement for child development. Furthermore, intervention programs targeting parents can be implemented, and play-based activity programs that include father involvement can be designed and tested through experimental studies.

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